CITY OF REXBURG (PWS 7330022)
SOURCE WATER ASSESSMENT FINAL REPORT

December 17, 2001

State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated source water assessment area and sensitivity factors associated with the well and aquifer characteristics.

This report for the *City of Rexburg, Idaho* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The City of Rexburg drinking water system consists of five wells. All wells except Well #5 have high susceptibility to all categories of potential contaminants: inorganic, synthetic organic, volatile organic and microbial contamination. Well #5 has moderate susceptibility to inorganic, synthetic organic, volatile organic and microbial contamination. The high score of hydrologic sensitivity and the intense irrigated agricultural land use as well as the pesticide priority area contributed greatly to the susceptibility scores.

No current significant potential water problems exist for the wells of the City of Rexburg. Total coliform bacteria were repeatedly detected in the distribution system in August 1994, July 1996, December 1997, September 1998, October 1998, November 1998, and December 2000. Arsenic has been detected in Well #1, Well #5, Well #6, and the Porter Well between 6 parts per billion (ppb) and 7 ppb, levels greater than ½ the recently revised maximum contaminant level (MCL) of 10 ppb. On October 31, 2001, the Environmental Protection Agency lowered the arsenic MCL from 50 ppb to 10 ppb, giving public water systems until 2006 to comply with the new standard. Though these levels are currently in compliance with the new standard, they may need to be monitored. No volatile organic (VOCs) or synthetic organic contaminants (SOCs) have been detected in any of the wells thus far. The inorganic contaminants (IOCs) barium, chromium, fluoride, and nitrate have been detected in the wells at levels below the MCLs set by the EPA. Surrounding agricultural land use practices have contributed to the ratings of “High” for county-level nitrogen fertilizer use, county-level herbicide use, and total county level Ag-chemical use. Additionally, the well delineations cross organics priority areas of the pesticides atrazine and alachlor.

It is unknown if the drinking water system of the City of Rexburg presently has a disinfection system in place. However, the City of Rexburg should be aware that even though there are no current water problems, the potential for contamination of the aquifer exists.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the wells of the City of Rexburg, drinking water protection activities should focus on correcting any deficiencies outlined in the sanitary surveys (inspections conducted every five years with the purpose of determining the physical condition of a water system’s components and its capacity). Also,

disinfection practices should be implemented if microbial contamination becomes a problem. As the arsenic level in most of the wells has been detected at values greater than ½ the MCL, the City of Rexburg may need to investigate various engineering controls such as ion exchange, reverse osmosis, or activated alumina to protect the drinking water. No chemicals should be stored or applied within the 50-foot radius of the wellheads. Additionally, there should be a focus on the implementation of practices aimed at reducing the leaching of farm chemicals from agricultural land within the designated source water areas and awareness of the potential contaminant sources within the delineation zones. Since much of the designated protection areas are outside the direct jurisdiction of the City of Rexburg, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation is near urban and residential land uses. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. As there is a transportation corridor through the delineation, the Idaho Department of Transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE CITY OF REXBURG, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment is also included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The public drinking water system for the City of Rexburg is comprised of five ground water wells that serve approximately 14,300 people through 1,811 connections for community use. Situated in Madison County, Well #1 and Well #6 are both located at the southeast end of Rexburg, approximately one mile east of Highway 20. Well #5 is located about one mile south of Rexburg and approximately one and ½ miles east of Highway 20. The Porter Park Well is located within the city of Rexburg in the northeast corner of Porter Park about 200 feet west of Highway 33. The North Well is located nearly one mile north of Rexburg and approximately a half mile east of Highway 33 (Figure 1).

No current significant potential water problems exist for the water system of the City of Rexburg. Total coliform bacteria were repeatedly detected in the distribution system in August 1994, July 1996, December 1997, September 1998, October 1998, November 1998, and December 2000. Arsenic has been detected in Well #1, Well #5, Well #6, and the Porter Well between 6 ppb and 7 ppb, levels greater than ½ the recently revised MCL of 10 ppb (See Table 1 below). On October 31, 2001, the Environmental Protection Agency lowered the arsenic MCL from 50 ppb to 10 ppb, giving public water systems until 2006 to comply with the new standard. Though these levels are currently in compliance with the new standard, they may need to be monitored. No VOCs or SOCs have been detected in any of the wells thus far. The IOCs barium, chromium, fluoride, and nitrate have been detected in the wells at levels below the MCLs set by the EPA. Surrounding agricultural land use practices have contributed to the ratings of "High" for county level nitrogen fertilizer use, county level herbicide use, and total county level Ag-chemical use. Additionally, the delineations of the wells cross organics priority areas of the pesticides atrazine and alachlor.

Table 1. Detections of Contaminants in the City of Rexburg wells.

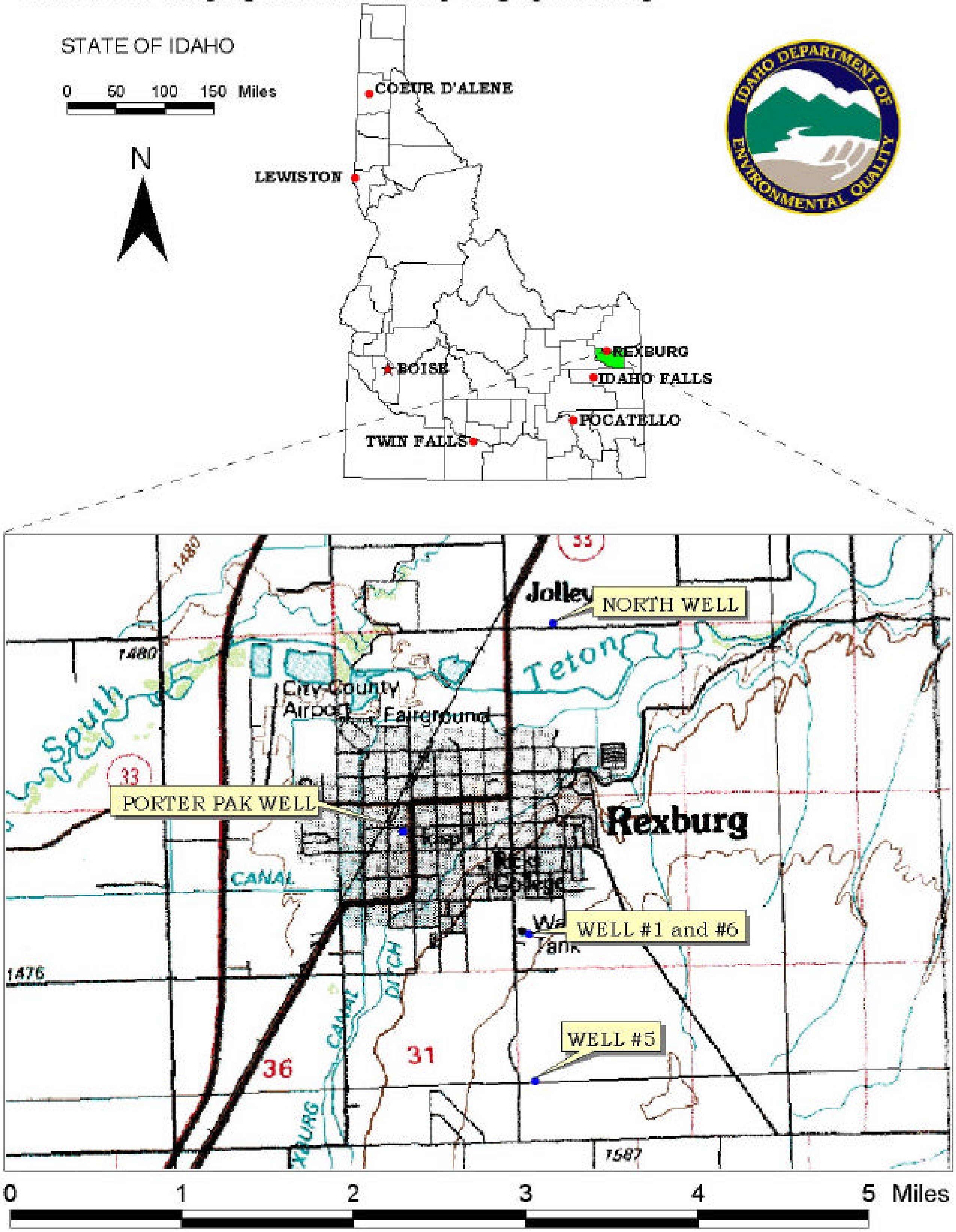
Well	Arsenic	Nitrate	Fluoride	Barium	Chromium
Well #1	7 ppb	< 2 mg/L			---
Well #5	6 ppb	<2 mg/L		---	---
Well #6	6 ppb	<2		---	---
North Well	---	< 3.4 mg/L		---	
Porter Park Well	6 ppb	< 2.6 mg/L		---	---

ppb = parts per billion; mg/L = milligrams per liter; = Detected in the well; --- = Not Detected in the well

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ contracted with Washington Group, International (WGI) to perform the delineations using a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Eastern Snake River Plain (ESRP) aquifer in the vicinity of the wells of the City of Rexburg. The computer model used site specific data, assimilated by WGI from a variety of sources including the City of Rexburg operator input, local area well logs, and hydrogeologic reports (detailed below).

FIGURE 1. Geographic Location of City of Rexburg



The ESRP is a northeast trending basin located in southeastern Idaho. Ten thousand square miles of the basin are primarily filled with highly fractured layered Quaternary basalt flows of the Snake River Group, which are intercalated with terrestrial and lacustrine (lake-deposited) sediments along the margins (Garabedian, 1992, p. 5). Individual basalt flows range from 10 to 50 feet in thickness and average 20 to 25 feet (Lindholm, 1996, p. 14). Basalt is thickest in the central part of the eastern plain and thins toward the margins. Whitehead (1992, p. 9) estimates the total thickness of the flows to be as great as 5,000 feet. A thin layer (0 to 100 feet) of windblown and fluvial sediments overlies the basalt.

The plain is bound on the northeast by rocks of the Yellowstone Group (mainly rhyolite) and Idavada Volcanics to the southwest. The Snake River flows along part of the southern boundary and is the only drainage that leaves the plain. Rivers and streams entering the plain from the south are tributary to the Snake River. Other than the Big and Little Wood rivers, rivers entering from the north vanish into the highly transmissive basalts of the Snake River Plain aquifer.

The layered basalts of the Snake River Group host one of the most productive aquifers in the United States. The aquifer is generally considered unconfined, yet it may be locally confined in some areas because of inter-bedded clay and dense unfractured basalt (Whitehead, 1992, p. 26). Whitehead (1992, p. 22) reports that well yields of 2,000 to 3,000 gal/min are common for wells open to less than 100 feet of the aquifer. Lindholm (1996, p. 18) estimates aquifer thickness to range from several hundred feet near the plain's margin to thousands of feet near the center.

The majority of aquifer recharge results from surface water irrigation activities (incidental recharge), which divert water from the Snake River and its tributaries (Ackerman, 1995, p. 4, and Garabedian, 1992, p. 11). Natural recharge occurs through stream losses, direct precipitation, and tributary basin underflow.

The Upper ESRP hydrologic province is located on the northeastern margin of the ESRP. The majority of the province is located above the confluence of the South and Henrys Forks of the Snake River in southwestern Madison County. The province occupies portions of Fremont, Madison, Jefferson, and Bonneville counties. The province covers 445 square miles, which is 4.3 percent of the ESRP's total area.

Published water table maps specific to the Upper ESRP regional aquifer are limited. The few area-specific maps that are available (e.g., Crosthwaite et al., 1967, p. 27, and Baker, 1991, p. 10) show similar patterns of flow to those depicted at the regional scale. Regional ground water flow is to the southwest paralleling the basin (Cosgrove et al., 1999, p. 21; deSonneville, 1972, p. 78; Garabedian, 1992, p. 48; and Lindholm, 1996, p. 23). Ground water flow direction at the local scale is thought to be highly variable due to preferential flow paths through the fractured and layered basalts.

The delineated source water assessment areas for the wells of the City of Rexburg can best be described as pie-shaped corridors approximately six miles long extending east-southeast from Rexburg and crossing the Union Pacific Railroad in the 6-year and 10-year time of travel (TOT) zones (Figures 2, 3, 4 and 5 in Appendix A). The actual data used by WGI in determining the source water assessment delineation areas are available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and others, such as cryptosporidium, and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the immediate area of the Porter Park Well consists of urban and residential, while the surrounding area is predominantly transportation uses and irrigated agriculture. Land use within the immediate area of Well #1 and Well #6 of the City of Rexburg is residential and irrigated agriculture, while the surrounding area is predominantly irrigated agriculture. Land use within the immediate area of the North Well and Well #5 is transportation uses and irrigated agriculture, while the surrounding area is predominantly irrigated agriculture.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in July through August 2001. The first phase involved identifying and documenting potential contaminant sources within the City of Rexburg Source Water Assessment Area (Figures 2, 3, 4, and 5 in Appendix A) through the use of computer databases and Geographic Information System maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the area.

The delineated source water areas encompass pie-shaped corridors of land between the well sites and the Union Pacific Railroad situated to the southeast. The delineations of most of the wells have only one to three potential contaminant sources each, including the Union Pacific Railroad, Highway 33, and the Teton River (Tables 2, 4, and 5, and Figures 2, 4, and 5 in Appendix A). The delineation of the Porter Park Well (Table 3, Figure 3 in Appendix A), located within the City of Rexburg, includes the largest number of potential contaminant sources. These sources consist of several underground storage tank (UST) sites, a couple of automobile repair and dealer businesses, as well as a printer shop, a cleaners shop and a general contractor. Additionally, the Ground Water Under Direct Influence (GWUDI) field survey indicates that a sewer line lies within 200 feet of Well #1, Well #6, and the Porter Park Well. Though this source was not included in the tables below, it was used in the assessments of the wells.

Section 3. Susceptibility Analyses

Each well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. Each of these three categories carries the same weight in the final assessment, meaning that a low score in one category coupled with higher scores in the other categories can still lead to a overall susceptibility of high. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheet for the system. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Hydrologic sensitivity rates high for all wells (Table 7). The soils surrounding the area of the wellheads are in the moderate to well-drained soil class. The well log for well #5 was unavailable, preventing a determination of the depth to ground water, composition of the vadose zone, or presence of low permeability layers. The well logs for the other wells indicate that the vadose zone is composed primarily of lava and cinder rock. They also show a lack of sedimentary interbeds between basalt layers above the producing zone of the well. The depth to first ground water varies for each well. The Porter Park Well's first ground water is found at 18 feet below ground surface (bgs) and the North Well's first ground water is found at 40 feet bgs. The first ground water for Well #1 and Well #6 is found around 200 feet bgs. According to a Public Water System Questionairre, Well #5's first ground water is found at 324 feet bgs.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The City of Rexburg wells have a moderate system construction score. Sanitary surveys for all wells indicate that the wellhead and surface seals are properly maintained and that all wells are protected from surface flooding. The well logs give useful information about their construction. The following paragraphs give information concerning each well's construction taken from the well logs and the Public Water System Questionarre. Additionally, Table 6 below includes a summary of the system construction for each well of the City of Rexburg.

Drilled to a depth of 265 feet bgs in 1960, Well #1 has a 16-inch diameter casing set to a depth of 200 feet bgs into 'gray and red lava'. Well #6, drilled in 1975 to a depth of 305 feet bgs, has a 0.288-thick, 20-inch diameter casing set to a depth of 225 feet bgs into 'broken basalt cinders'. The annular seal for Well #6 was installed to the casing depth: 225 feet bgs.

The Porter Park Well, drilled to a depth of 172 feet bgs in 1950, has an 18-inch diameter casing set to 70 feet bgs into 'hardpan'. A 24-inch diameter casing set to a depth of 87.5 feet bgs into 'lava-soft, red, broken' follows the 18-inch diameter casing. The casing was sealed to 70 feet bgs using grout.

Drilled in 1992 to a depth of 296 feet bgs, the North Well has a 0.375-inch thick, 16-inch diameter casing set to a depth of 125 feet bgs into 'hard gray lava' and a 0.375-inch thick, 14-inch diameter casing from 125 to 146 feet bgs into 'red clay' and a 0.375-inch thick, 12-inch diameter casing from 146 to 211 feet bgs into 'black lava and clay'. The annular seal was installed to a depth of 40 feet bgs into 'gravel and sand'.

The well log for well #5 was not available. Therefore, there is little information about its construction. However, the Public Water System Questionnaire for Well #5 indicates that the well was drilled in 1975 to a depth of 388 feet. A 16-inch diameter casing was installed to a depth of 337 feet.

Though the well may have been in compliance with standards when it was completed, current public water system (PWS) well construction standards are more stringent. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. These standards include provisions for well screens, pumping tests, and casing thicknesses to name a few. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Twelve-inch diameter up to twenty-inch diameter wells requires a casing thickness of 0.375-inches. Twenty-four-inch diameter wells require a casing thickness of 0.500-inches.

Table 6. City of Rexburg Well Construction Summary Information

Well	Well Depth (ft)	Water Table Depth (ft)	Casing: diameter/ thickness (in)	Casing: depth (ft)/ formation	Surface seal: depth (ft)/ formation	Screened Interval (ft)	Drill Year	Sanitary Survey Elements (A/B) [1]
Well #1	265	204	16/NI	200/Gray and red lava	NI	NI	1960	Yes/Yes
Well #6	305	203	20/0.288	225/Broken basalt cinders	225/Broken basalt cinders	NI	1975	Yes/Yes
Porter Park Well	172	18	18/NI 24/NI	70/Hardpan 87.5/Soft red lava	70/Hardpan	NI	1950	Yes/Yes
North Well	296	30	16/0.375 14/0.375 12/0.375	125/Hard gray lava 146/Red clay 211/Black lava and clay	40/Sand and Gravel	NI	1992	Yes/Yes
Well #5	388	324	16/NI	337/NI	NI	NI	1975	Yes/Yes

[1] A = Well and surface seal in compliance; B = Protected from surface flooding
NI = no information was available

Potential Contaminant Source and Land Use

All wells of the City of Rexburg except for the Porter Park Well rate moderate for IOCs (i.e. nitrates arsenic), SOCs (i.e. pesticides) and VOCs (i.e. petroleum products) and low for microbial contaminants (i.e. bacteria). The Porter Park Well rates high for IOCs, VOCs, SOCs, and it rates moderate for microbial contaminants. The number of leachable contaminant sources within the 3-year TOT as well as the urban land use surrounding the Porter Park Well contributed the greatest number of points to its high scores. The predominant agricultural land use and the pesticide priority area as well as the limited number of contaminant sources within the delineations of the other wells contributed to their land use scores.

The wells are in a county with high nitrate fertilizer use, high levels of herbicide use, and high total ag-chemical use. Additionally, the delineations cross atrazine and alachlor (pesticides) priority areas. Total coliform bacteria were repeatedly detected in the distribution system in August 1994, July 1996, December 1997, September 1998, October 1998, November 1998, and December 2000. Arsenic has been detected in Well #1, Well #5, Well #6, and the Porter Well between 6 ppb and 7 ppb, levels greater than ½ the recently revised MCL of 10 ppb. On October 31, 2001, the EPA lowered the arsenic MCL from 50 ppb to 10 ppb, giving public water systems until 2006 to comply with the new standard. Though these levels are currently in compliance with the new standard, they may need to be monitored. No VOCs or SOCs have been detected in any of the wells thus far. The IOCs barium, chromium, fluoride, and nitrate have been detected in the wells at levels below the MCLs set by the EPA.

Final Susceptibility Ranking

A detection above a drinking water standard MCL or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Additionally, if there are contaminant sources located within 50 feet of the source then the wellhead will automatically get a high susceptibility rating. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time of travel zone (Zone 1B) and agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, all of the City of Rexburg wells rate high for all categories of potential contaminants except for Well #5. Well #5 rates moderate for all potential contaminant categories.

Table 7. Summary of City of Rexburg Susceptibility Evaluation

	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
Well		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
North Well	H	M	M	M	L	M	H	H	H	H
Porter Park Well	H	H	H	H	M	M	H	H	H	H
Well #1	H	M	M	M	L	M	H	H	H	H
Well #6	H	M	M	M	L	M	H	H	H	H
Well #5	H	M	M	M	L	M	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

Overall, all of the City of Rexburg wells rank high for IOCs, VOCs, SOCs, and microbial contaminants except for Well #5. Well #5 ranks moderate for IOCs, VOCs, SOCs and microbial contaminants. The heavily-weighted high score of hydrologic sensitivity as well as the intense agricultural land use contributed greatly to the susceptibility scores. For the Porter Park Well, the number of potential contaminant sources that lie within the 3-year TOT zone of the delineation contributed a high number of points to the susceptibility ranking. Many of the sources in the 3-year TOT contain chemical contaminants that can leach into the aquifer. The high county-wide use of agricultural chemicals and the pesticide priority areas also contributed to the overall susceptibility scores.

No current significant potential water problems exist for the water system of the City of Rexburg. Total coliform bacteria were repeatedly detected in the distribution system in August 1994, July 1996, December 1997, September 1998, October 1998, November 1998, and December 2000. Arsenic has been detected in Well #1, Well #5, Well #6, and the Porter Well between 6 ppb and 7 ppb, levels greater than ½ the recently revised MCL of 10 ppb (See Table 1). On October 31, 2001, the EPA lowered the arsenic MCL from 50 ppb to 10 ppb, giving public water systems until 2006 to comply with the new standard. Though these levels are currently in compliance with the new standard, they may need to be monitored. No VOCs or SOCs have been detected in any of the wells thus far. The IOCs barium, chromium, fluoride, and nitrate have been detected in the wells at levels below the MCLs set by the EPA. Surrounding agricultural land use practices have contributed to the ratings of "High" for county-level nitrogen fertilizer use, county-level herbicide use, and total county level Ag-chemical use. Additionally, the delineations of the wells cross organics priority areas of the pesticides atrazine and alachlor.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the wells of the City of Rexburg, drinking water protection activities should focus on correcting any deficiencies outlined in the sanitary surveys (inspections conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). Also, disinfection practices should be implemented if microbial contamination becomes a problem. As the arsenic level in most of the wells has been detected at values greater than ½ the MCL, the City of Rexburg may need to investigate various engineering controls such as ion exchange, reverse osmosis, or activated alumina to protect the drinking water. No chemicals should be stored or applied within the 50-foot radius of the wellheads. Additionally, there should be a focus on the implementation of practices aimed at reducing the leaching of farm chemicals from agricultural land within the designated source water areas and awareness of the potential contaminant sources within the delineation zones. Since much of the designated protection areas are outside the direct jurisdiction of the City of Rexburg, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any source water protection plan as the delineation is near to urban and residential land uses. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. As there are transportation corridors through the delineation, the Idaho department of transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive source water assessment protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls Regional DEQ Office (208) 528-2650

State DEQ Office (208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5 mg/L.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

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Appendix A

City of Rexburg

Potential Contaminant Inventories
and Delineation Maps
Tables 2, 3, 4, and 5
Figures 2, 3, 4, and 5

Table 2. Potential Contaminant Inventory for the North Well of the City of Rexburg.

Site #	Source Description[1]	TOT ZONE[2]	Source of Information	Potential Contaminants[3]
1	WLAP – Potato Processing	0 - 3	Database Search	IOC, VOC, SOC, Microbials
2	UST – Closed	3 – 6	Database Search	VOC, SOC
	Teton River	0 - 3	GIS Map	IOC, VOC, SOC, Microbes
	Union Pacific Railroad	6 - 10	GIS Map	IOC, VOC, SOC

[1] UST = underground storage tank, WLAP = wastewater land application
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 3. Potential Contaminant Inventory for the Porter Park Well of the City of Rexburg.

Site #	Source Description[1]	TOT ZONE[2]	Source of Information	Potential Contaminants[3]
1	UST – Open	0 – 3	Database Search	VOC, SOC
2	UST – Closed	0 – 3	Database Search	VOC, SOC
3	UST – Closed	0 – 3	Database Search	VOC, SOC
4	UST – Closed	0 – 3	Database Search	VOC, SOC
5	UST – Closed	0 – 3	Database Search	VOC, SOC
6	UST – Closed	0 – 3	Database Search	VOC, SOC
7	UST – Closed	0 – 3	Database Search	VOC, SOC
8	UST – Open	0 – 3	Database Search	VOC, SOC
9	Automobile Dealers	0 – 3	Database Search	VOC, SOC
10	Printers	0 – 3	Database Search	IOC, VOC
11	Cleaners	0 – 3	Database Search	VOC
12	Automobile Repairing and Service	0 – 3	Database Search	IOC, VOC, SOC
13	Automobile Parts and Supplies	0 – 3	Database Search	VOC, SOC
14	General Contractors	0 – 3	Database Search	IOC, VOC, SOC
	Highway 33	0 – 3	GIS Map	IOC, VOC, SOC, Microbials
	Union Pacific Railroad	6 – 10	GIS Map	IOC, VOC, SOC, Microbials

[1] UST = underground storage tank
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 4. Potential Contaminant Inventory for Well #1 and Well #6 of the City of Rexburg.

Site #	Source Description[1]	TOT ZONE[2]	Source of Information	Potential Contaminants[3]
	Union Pacific Railroad	6 - 10	GIS Map	IOC, VOC, SOC

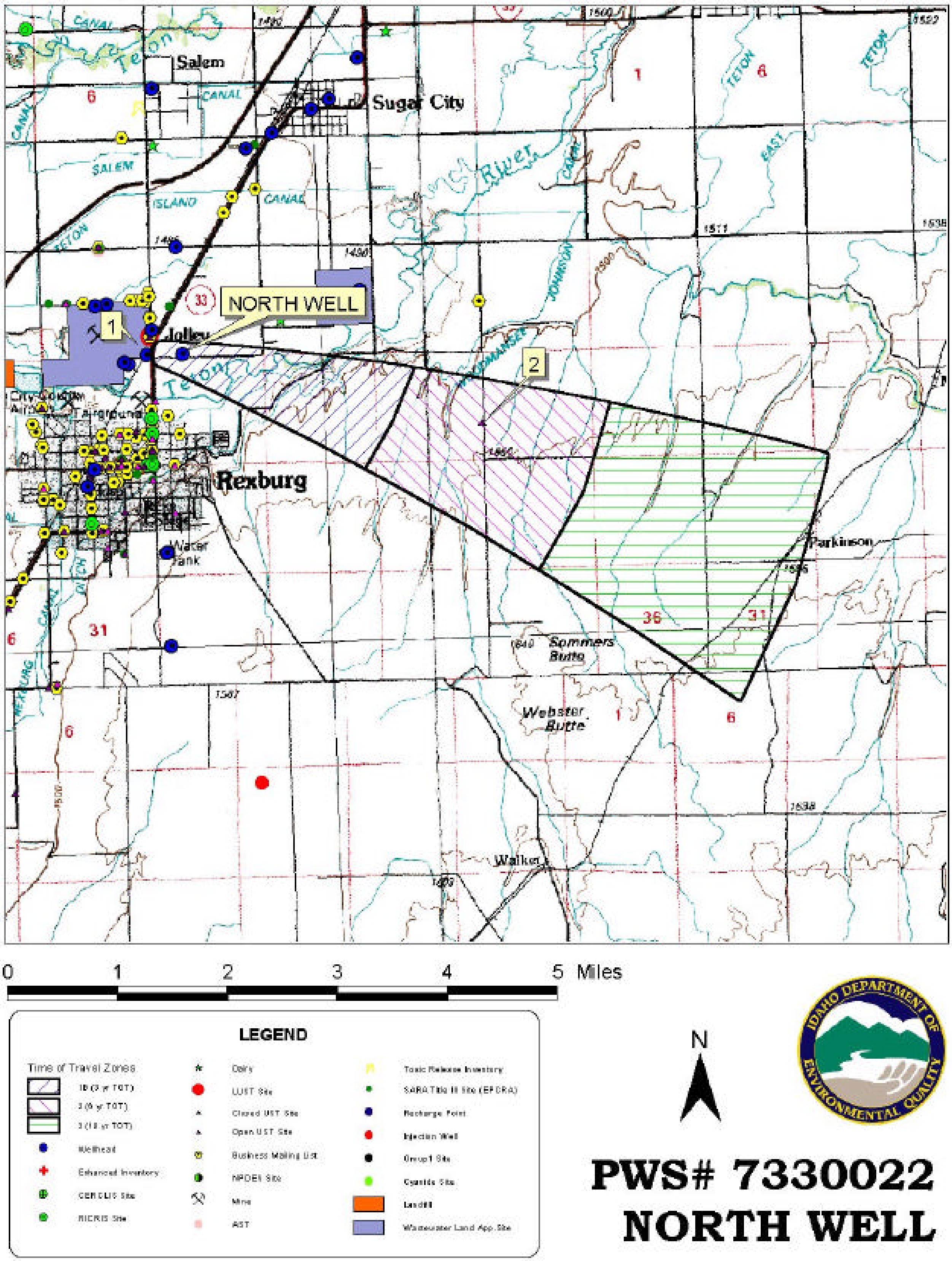
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 5. Potential Contaminant Inventory for Well #5 of the City of Rexburg.

Site #	Source Description[1]	TOT ZONE[2]	Source of Information	Potential Contaminants[3]
	Union Pacific Railroad	3 - 6	GIS Map	IOC, VOC, SOC

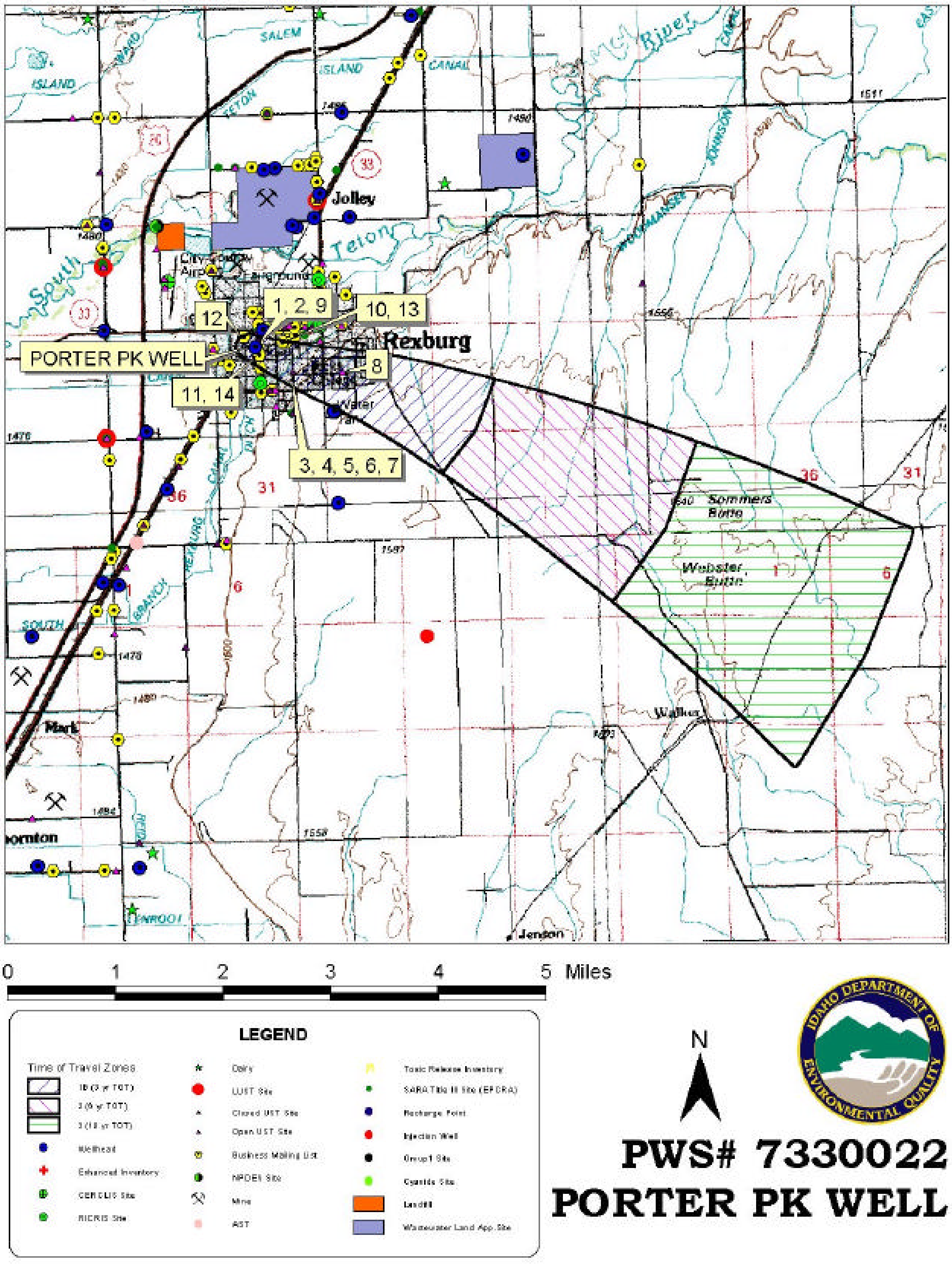
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Figure 2. City of Rexburg Delineation Map and Potential Contaminant Source Locations



PWS# 7330022
NORTH WELL

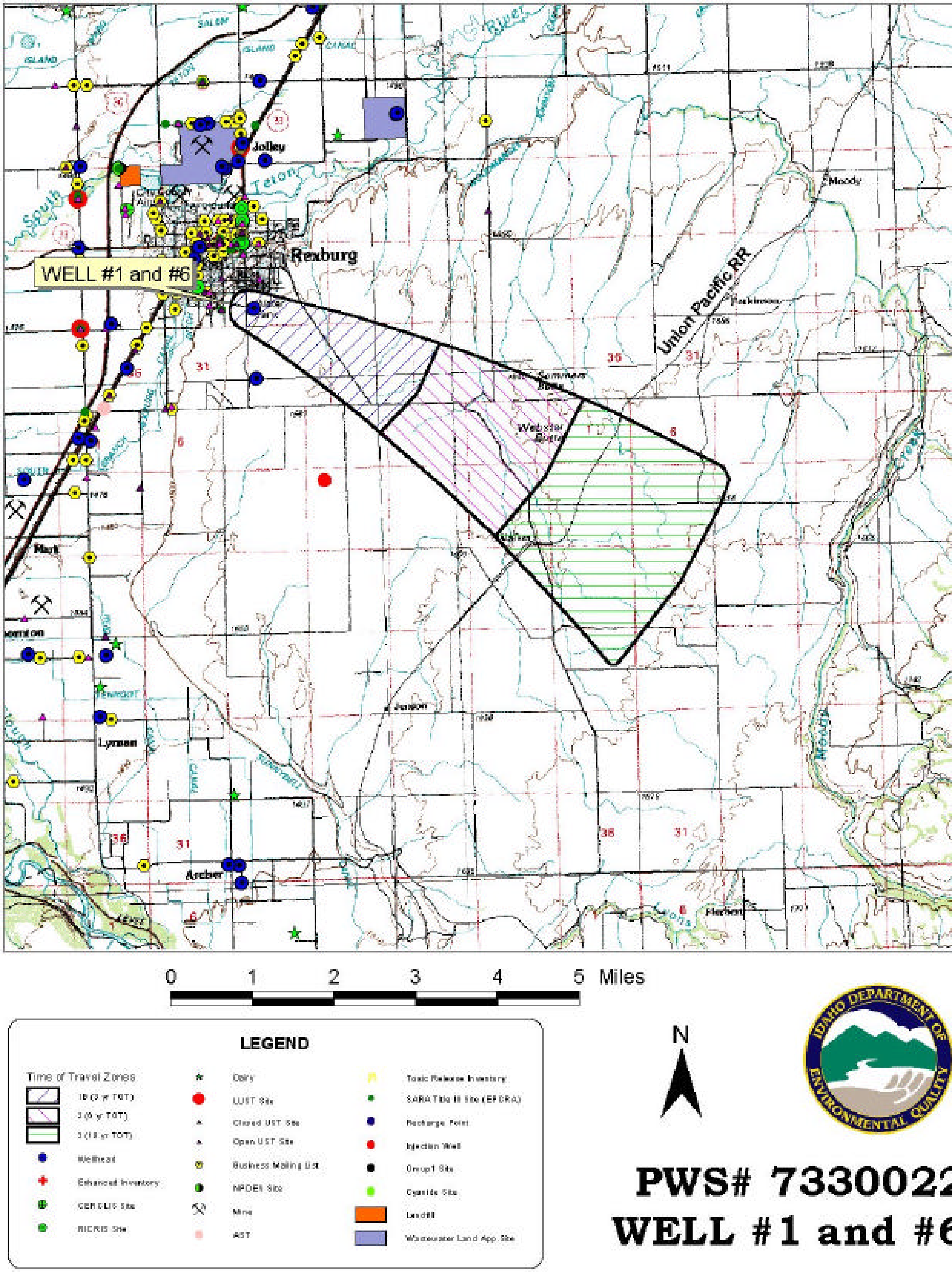
Figure 3. City of Rexburg Delineation Map and Potential Contaminant Source Locations



PWS# 7330022

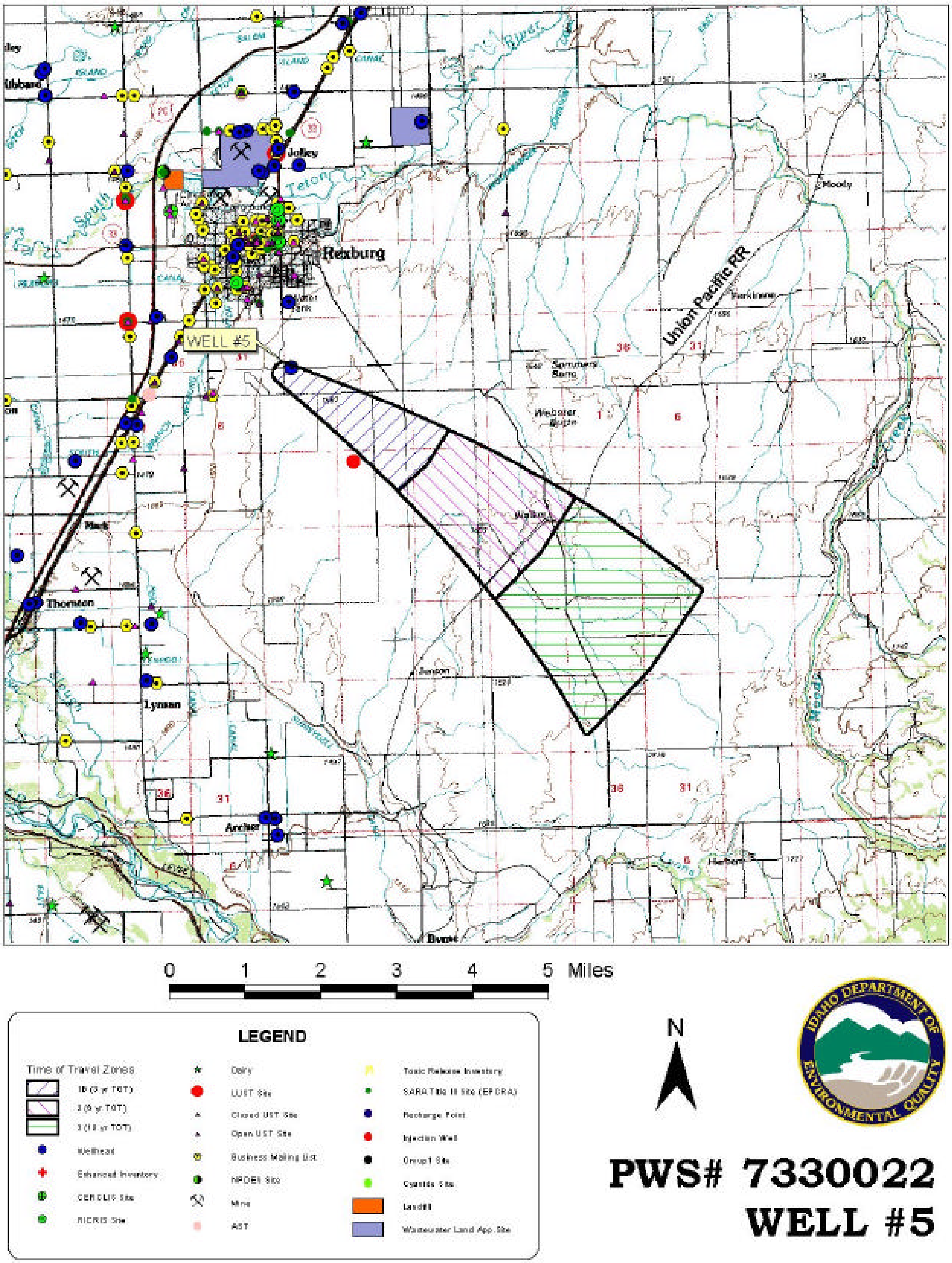
PORTER PK WELL

Figure 4. City of Rexburg Delineation Map and Potential Contaminant Source Locations



PWS# 7330022
WELL #1 and #6

Figure 5. City of Rexburg Delineation Map and Potential Contaminant Source Locations



Attachment A

City of Rexburg
Susceptibility Analysis
Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report — Public Water System Name : REXBURG CITY OF — Well# : NORTH WELL (NEW

Public Water System Number 7330022 — 11/20/2001 10:59:15 AM

1. System Construction		SCORE
Drill Date	7/1/2001	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1995
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		4

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		6

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	4	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or	YES	5	1	1	
4 Points Maximum		4	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B		10	7	7	6
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		3	3	3	0
Cumulative Potential Contaminant / Land Use Score		19	14	16	8
4. Final Susceptibility Source Score		14	13	13	13
5. Final Well Ranking		High	High	High	High

Ground Water Susceptibility Report   Public Water System Name : REXBURG CITY OF   Well# : PORTER PK WELL

Public Water System Number 7330022   11/20/2001 10:29:02 AM

1. System Construction		SCORE			
Drill Date	10/6/1950				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1995			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
	Total System Construction Score	4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
	Total Hydrologic Score	6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A	4	2	4	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	5	16	14	2
(Score = # Sources X 2) 8 Points Maximum		8	8	8	4
Sources of Class II or III leacheable contaminants or	YES	9	16	14	
4 Points Maximum		4	4	4	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B	16	16	18	8
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II	2	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III	3	3	3	0
Cumulative Potential Contaminant / Land Use Score		25	23	27	10
4. Final Susceptibility Source Score		15	15	15	14
5. Final Well Ranking		High	High	High	High

Ground Water Susceptibility Report   Public Water System Name : REXBURG CITY OF   Well# : WELL #1

Public Water System Number 7330022   11/20/2001 10:51:35 AM

1. System Construction		SCORE			
Drill Date	10/3/1960				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1995			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
	Total System Construction Score	4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
	Total Hydrologic Score	6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A	4	2	4	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or	YES	5	1	1	
4 Points Maximum		4	1	1	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B	10	7	9	6
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II	2	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III	3	3	3	0
Cumulative Potential Contaminant / Land Use Score		19	14	18	8
4. Final Susceptibility Source Score		14	13	14	13
5. Final Well Ranking		High	High	High	High

1. System Construction		SCORE			
Drill Date	3/28/1975				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1995			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
	Total System Construction Score	4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
	Total Hydrologic Score	6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A	4	2	4	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or	YES	5	1	1	
4 Points Maximum		4	1	1	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B	10	7	9	6
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II	2	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III	3	3	3	0
Cumulative Potential Contaminant / Land Use Score		19	14	18	8
4. Final Susceptibility Source Score		14	13	14	13
5. Final Well Ranking		High	High	High	High

Ground Water Susceptibility Report   Public Water System Name : REXBURG CITY OF   Well# : WELL #5

Public Water System Number 7330022   11/26/2001 8:48:31 AM

1. System Construction		SCORE
Drill Date	3/1/1975	
Driller Log Available	NO	
Sanitary Survey (if yes, indicate date of last survey)	YES	1995
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		4

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	YES	0
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		5

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	4	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B		4	4	6	4
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		5	5	5	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		1	1	1	0
Cumulative Potential Contaminant / Land Use Score		14	12	16	6
4. Final Susceptibility Source Score		12	11	12	11
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate